

HP38 Hockey Puck™ non-contact rotary position sensor

- OEM driven solution with minimum order quantities
- Compact bare bones non-contact rotary encoder
 - Body only 0.69" (17.5mm) tall
- Patented true non-contact position sensing
 - 0.5" (12mm) gap between sensor and application
 - 0.10" (2.5mm) center alignment
 - 30° planar tilt
- Totally sealed IP69k (*connector dependent*)
- LED indicators for power and output feedback
- Outputs: Quadrature, SSI, Analog, & J1939 Can Bus



STANDARD OPERATING CHARACTERISTICS

| ELECTRICAL | Outputs | B - PPR - SEPP Incremental 13 bit Quadrature w/ Single Ended Output A B Z |
|---------------|--------------------------------|---|
| | B - 1939 | J1939 13 bit @512 positions |
| | B - PWM | PWM absolute position |
| | B - SSI1 | SSI absolute position @512 positions |
| | V1 | Voltage Out / 5 VDC IN, 0-5 VDC OUT |
| | V2 | Voltage Out / 6-36 VDC IN, 0-5 VDC OUT |
| | Input Power | 6 to 30 VDC at approx 60 mA max, <i>not including output loads</i> |
| | Electrical Protection | Over-voltage, reserve-voltage, output short-circuit protected |
| | LED Indicators | Power and output channels |
| | Connections | M8, M12 Pigtail, Terminal Block, Flying Lead Cable, or Deutsch (4 or 6 pin) |
| | Resolution | 0.3° |
| | Repeatability | 0.30% |
| MECHANICAL | Housing Diameter | 38mm |
| | Housing Material | Black Delrin™ (<i>standard</i>) |
| | Housing Height | 0.69" (17.5mm) body |
| | Mounting | 32mm (.884) spacing w/ 4mm diameter screws |
| | Weight | 1.3 oz |
| | Magnet / sensor gap* | Standard 0.5" (12mm) (Max w/ custom mag assembly up to 1" [30mm]) |
| | Rated planer tilt / axial gap* | Planar 30° (Max 45°) / Axial 0.1" (2.5mm) (Max 0.16" [4mm]) |
| | Speed | 3000 RPM max |
| | Operating Temperature | -30° to +80° C |
| | Storage Temperature | -40° to +90° C |
| ENVIRONMENTAL | Humidity | 100% |
| | Shock | 400g/6ms (MIL STD 202) |
| | Vibration | 5 to 3000 Hz, 20g (MIL STD 202) |
| | Protection Class | IP69K (<i>connection dependent</i>) |

* Non-contact tolerances
rated using MAGH-RING
1/4x20 magnet accessory.

General ordering guide found on next page (S1 ; I4 / 2)



HP38 GENERAL ORDERING GUIDE

Build part number first by selecting **Housing Style** (code 1), **MagElec** (code 2), and **Connection** (code 3). Add **Special Codes** (code 4) to the end of the Jorral part number. Refer to '**Special Part Number Information**' for explanation of modifiers.

Examples: HP38-B-0256-SEPP-M12P - Black Delrin™(HP38), M12 pigtail (M12P), 10 bit incremental quadrature @256 ppr

HP38-B-1939-SC72 - Black Delrin™(HP38), 72" Shielded cable, 10 bit J1939 @1024 positions

HP38-V1-0-360-0.5-4.5-CW-C72 - Black Delrin™(HP38), 72" Cable (SC72), 0-5v Voltage Out (V1) @0-360°, 0.5-4.5v out, clockwise signal

| Code 1: Housing Style | Code 2: MagElec (Sensor Output) | Code 3: Connection | Code 4: Special Codes |
|--|---|---|------------------------------------|
| HP38 HP38 material black Delrin™ connector orientation SIDE EXIT. For REAREXIT connector on HP38 add code 33 to end of P/N. | B- _____ - SEPP 13 bit single ended quadrature - A B Z | TRM Pluggable Terminal block | 31 Side Exit (housing wall) |
| | | M8 M8 male | 33 Back Exit (epoxy side) |
| | B-1939 13 bit J1939 @512 positions | M12P M12 male on 18' pigtail | 71 Roller |
| | | M12P M12 male on 18' pigtail | 72 Spindle |
| | B-SSI1 Absolute position SSI @512 positions | CXX Flying lead cable (enter XX as inches) | |
| * More outputs and connection options available, contact Jorral if desired configuration is not listed | B-PWM PWM absolute position | SCXX Shielded cable (enter XX as inches) | |
| | V1 5 VDC IN, 0-5 VDC OUT | DE4 DT04 - 4 pin male Deutsch | |
| | V2 6-36 VDC IN, 0-5 VDC OUT | DE6 DT04 - 6 pin male Deutsch | |

Special Part Number Information Review below code sections for important P/N build information

Code 1: Housing Style

- **Modifier 33** - For REAREXIT connector orientation on HP38 add 33 to end of Jorral P/N.
- **HP38** - Standard connector orientation SIDE EXIT. For rear exit add modifier 33 to end of Jorral P/N.

Code 2: MagElec

(B- _____ - SEPP)

- Enter Quadrature PPR in place of _____
- B = 10 bit PPR
- **Available 10 bit PPR:** 0032, 0064, 0128, 0256

B-1939

- 10 bit J1939 output is 512 positions
- B = 10 bit

V1, V2, and I1 (Analog MagElec P/N Guide)

- First select MagElec code (**V1, V2 or I1**) then Angle Range (**A1-A2**), Voltage Range (**V1-V2**) and Signal Direction (**Clockwise [CW] or Counter [CCW]**)
- **PART NUMBER FORMULA**
(MagElec)-(A1-A2)-(V1-V2)-(CW or CCW)
- **EXACT V1, V2, and I1 EXAMPLES**
HP38 - V1 - 0-360 - 0.5-4.5 - CW - C72
HP38 - V2 - 0-180 - 0-5 - CCW - C72
HP38 - I1 - 180-270 - 4-20 - CW - C72

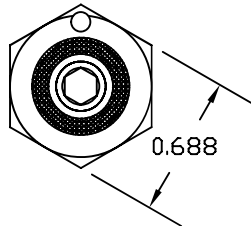
Code 3: Connections

- **All Outputs, All Connections** - Standard connection orientation SIDE EXIT. For REAREXIT connector on HP38 add 33 to end of Jorral HP38 P/N
- **J1939 Output** - Addressing via varying value resistor in connection requires at least five conductors (*M12, DE6 and Cables addressing compatible*)
- **All Outputs w/ Deutsch** - DE4 and DE6 connection Deutsch connectors add \$20 to HP38 list

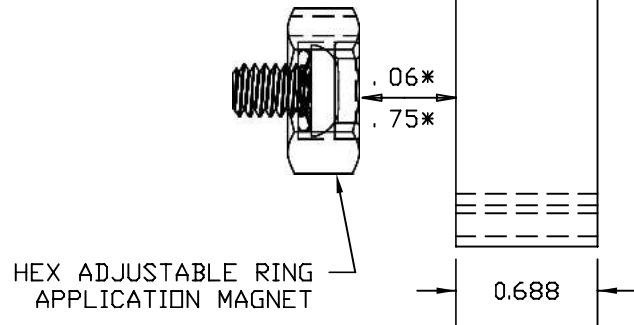


HP38 DIMENSIONS & GENERAL PIN OUTS

HEX ADJUSTABLE MAGNET
DETAIL (FACE VIEW)



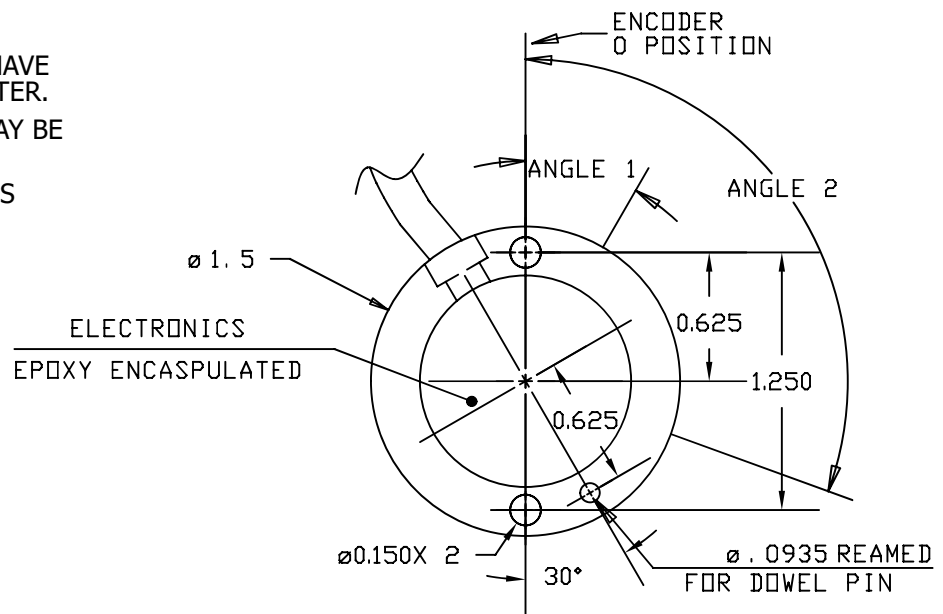
* DISTANCE DEPENDANT
ON MOUNT MATERIALS



NOTE:

MAGNETIC MOUNTS MUST HAVE
1" DIAMETER HOLE ON CENTER.
NON-MAGNETIC MOUNTS MAY BE
SOLID.

MOUNT WITH 316 STAINLESS
STEEL 6-32 SCREWS.



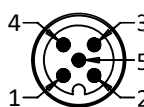
DT04-4P MALE
FACE VIEW



DT04-4P J1939 OUTPUT

1 = YEL = CAN HIGH
2 = GRN = CAN LOW
3 = RED = +VDC (VIN)
4 = BLK = COMMON/GROUND

M12-5P MALE
FACE VIEW



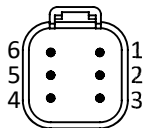
**M12-5P/CABLE/FLYING LEAD
QUADRATURE OUTPUT**

1 = BRN = +VDC (VIN)
2 = WHT = CHANNEL B
3 = BLUE = COMMON/GROUND
4 = BLK = CHANNEL A
5 = GRY = CHANNEL Z

**M12-5P/CABLE/FLYING LEAD
PROPORTIONAL (ANALOG) OUTPUT**

1 = BRN = +VDC (VIN)
2 = WHT = DIG. LIMIT OUT*
3 = BLUE = COMMON/GROUND
4 = BLK = PROP. VDC OUTPUT
5 = GRY = NOT USED
*OPTION CONSULT FACTORY

DT04-6P MALE
FACE VIEW



DT04-6P J1939 OUTPUT

1 = YEL = CAN HIGH
2 = GRN = CAN LOW
3 = RED = +VDC (VIN)
4 = BLK = ADDRESS GROUND
5 = WHT = ADDRESS PROG. RESISTOR
6 = BLK = COMMON/GROUND

**M12-5P AND 5 CONDUCTOR
CABLE J1939 OUTPUT**

1 = BRN = +VDC (VIN)
2 = WHT = CAN HIGH
3 = BLUE = COMMON/GROUND
4 = BLK = CAN LOW
5 = GRY = OPTIONAL ADDRESS
PROGRAMMING RESISTOR

Dimensions informative only
For most recent dimensions please consult factory